are always coded together in a code word, so that Fig. 2 represents a part of the coded bit stream comprising 20 or 40 spectral values. In the case where each Huffman code word comprises 2 spectral values, the code word referenced by the number 1 represents the first two spectral values. The length of this code word is relatively short, meaning that the values of the first two spectral values, i.e. of the two lowest frequency coefficients, occur relatively often. The code word with the number 2, on the other hand, is relatively long, meaning that the contributions of the third and fourth spectral coefficients in the coded audio signal are relatively infrequent, which is why they are coded with a relatively large number of bits. It can also be seen from Fig. 2 that the code words with the numbers 3, 4 and 5, which represent the spectral coefficients 5 and 6, 7 and 8, and 9 and 10, also occur relatively frequently, since the length of the individual code words is relatively short. Similar considerations apply to the code words with the numbers 6 - 10.

As has already been mentioned, it is clear from Fig. 2 that the Huffman code words for the coded spectral values are arranged in linearly ascending order in the bit stream from the point of view of the frequency in the case of a bit stream which is generated by a known coding device.

A big disadvantage of Huffman codes in the case of error-afflicted channels is the error propagation. If it is assumed e.g. that the code word number 2 in Fig. 2 is disturbed, there is a not insignificant probability that the length of this erroneous code word number 2 will also be changed. This thus differs from the correct length. If, in the example of Fig. 2, the length of the code word number 2 has been changed by a disturbance, it is no longer possible for a decoder to determine where the code words 3 - 10 start, i.e. almost the whole of the represented audio signal is affected. Thus all the

other code words following the disturbed code word cannot be decoded properly either, since it is not known where these code words start and since a false starting point was chosen because of the error.

As a solution to the problem of error propagation European patent No. 0612156 proposes that some of the code words of variable length should be arranged in a raster and the other code words should be assigned to the remaining gaps so that the start of a code word can be more easily identified without complete decoding or in the event of a faulty transmission.

The known method provides a partial remedy for error propagation by resorting the code words. A fixed place in the bit stream is reserved for some code words and the spaces which are left can be occupied by the remaining code words. This entails no extra bits, but prevents error propagation among the resorted code words in the event of an error.

The decisive parameter for the efficiency of the known method is how the raster is defined in practice, i.e. how many raster points are needed, the raster distance between the raster points, etc. However, European patent 0612156 does not go beyond the general proposition that a raster should be used to curtail error propagation; there are no details as to how the raster should be efficiently structured so as to achieve error-tolerant, and at the same time efficient, coding.

EP-A-0 717 503 discloses a digital coding and decoding method in which discrete-time samples of a music signal are transformed into the frequency domain, whereupon the spectral values which are obtained are quantized and then entropy coded. The entropy coding delivers a certain number of code words of variable length, some of which are arranged in a raster while the others are inserted in the remaining spaces in the raster.

EP-A-0 492 537 relates to an information recording device for video and audio information in which information is divided up into small blocks of pixels, each containing a plurality of pixels, whereupon each small block is converted into orthogonal components by means of an orthogonal transformation. The orthogonal components are then coded using a code having code words of variable length. Some of the coded code words are written into a first memory. If a code word has more bits than are provided for by the first memory, the remaining bits of this code word are written into another memory.

Summary of the Invention

It is the object of the present invention to provide a concept for the error-tolerant and nevertheless efficient coding and decoding of an audio signal or a bit stream.

In accordance with a first object of the present invention, this object is achieved by a method for coding an **audio signal** to obtain a coded bit stream, comprising the following steps: transforming a block of discrete-time samples of the **audio signal** into the frequency domain to obtain a block of spectral values which represent the **audio signal**; coding the spectral values with a code table having a limited number of code words of different length to obtain spectral values coded with code words, the length of a code word which is assigned to a spectral value generally being that much shorter the higher the probability of occurrence of the spectral value is; determining a raster for the coded bit stream where the raster has equidistant raster points and where the separation of the raster points depends on the code table; defining priority code words among the code words, those code words which repre-